

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139623

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF THE IR GAS ANALYZER IS RECOMMENDED FOR THE MOST ACCURATE DETN. OF PHOTOSYNTHETIC INTENSITY. IF THE DIFFERENCE BETWEEN CO SUB2 CONC. IN THE PHOTOSYNTHETIC CHAMBER AND OUTSIDE IT (DELTA CO SUB2) IS AS LOW AS 5 PPM, THE ERROR IN THE DETN. OF PHOTOSYNTHETIC ACTIVITY DOES NOT EXCEED 15PERCENT. THE ERROR IS LESS THAN 5PERCENT IF DELTA CO SUB2 IS HIGHER THAN 5 PPM. FACILITY: INST. PLANT PHYSIOL., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: None

KUZNETSOV, A. Ya., CHERNYAVSKAYA, N. A., OKATOV, M. A., BURMISTROV, A. N.

"A Method of Preparing Band-Pass Filters for the Long-Wave Infrared Region of the Spectrum"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 31, 1973, p 144, 391520

Abstract: The filter is designed as a sharp cutoff device and is filled with hygroscopic, powdered materials such as KBr, NaCl, NaF, and CsBr heated to temperatures of 120°C and above for at least two hours before and after pulverization. The filling is then processed by a water-proofing solution. Some examples of the latter are named.

- END -

CSO: 1862-W

1/1

USSR

UDC: 621.373

OKAZOV, A. M.

"Wide-Range Measurement Harmonic Oscillator"

Tr. Sev.-Kavkaz. Gornometallurg. in-ta (Transactions of the North Caucasus Mining Metallurgical Institute) 1970, No. 28, pp 117-118 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A421)

Translation: A vacuum-tube oscillator has been developed which satisfies requirements that are more stringent than those demanded of ordinary oscillators regarding frequency stability, constancy of output voltage amplitude in the frequency range, and the possibility of voltage control in the oscillatory circuit. A block diagram of the oscillator is given, and a short description is given of its analysis and design. The model showed a frequency stability of the order of $1 \cdot 10^{-4}$ in the frequency range of 10^3 to $2 \cdot 10^7$ Hz. Bibliography of three. E. L.

1/1

USSR

UDC 621.396.933.2

BALANDIN, V. I., KIYLO, L. E., OKEANOV, Ye. N., KHOSID, S. R.

"An Automatic Keyer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285067, class 21, filed 29 Aug 68, published 29 Oct 70, p 46

Translation: This Author's Certificate introduces an automatic keyer which contains a cadence pulse generator with frequency divider, a programmed decoder, a trigger-type direction-finding signal shaper, a reset circuit, an OR circuit with output connected to a switch in the supply circuit of the recognition signal decoder, a controlling device, and an output amplifier. As a distinguishing feature of the patent, to ensure universality in shaping the call signal and in the modes of operation, the keyer contains an additional OR circuit connected between the outputs of the recognition signal decoder and the input of the controlling device, as well as a mode switch whose inputs are connected to the programmed decoder while the outputs are connected to the above-mentioned controlling device and the reset circuit.

1/1

USSR

UDC 669.14.018.821

OKENKO, A. P., Candidate of Technical Sciences, KUL'KOVA, M. N., Engineer,
and CHERNYSHOV, G. V., Krasnyy Oktyabr' Plant

"Investigation of the Causes of Reduced Ductility in Ingots of Steel 08Kh19N10B"

Moscow, Stal', No 10, Oct 73, pp 934-935

Abstract: A comparative study of the microstructure and phase composition of sound and defective metal showed that failure during rolling in the range 1060-1180° C occurs by the stratification of lamellar phases of niobium carbonitrides and niobium oxides. In a defect-free metal there is only niobium carbonitride, which is thinner with a smaller number. The presence of niobium oxides testifies to the inadequate deoxidation with aluminum. A large quantity of the carbonitride phase is precipitated also in the 800-600° C interval as a result of soaking the ingots prior to setting. Addition of powdered aluminum during the refining period and guaranteed setting at 800° C made it possible to increase the hot ductility of 08Kh19N10B steel during rolling. I. I. TETERIN and V. I. KONONENKOV, Engineers, participated in this work. One figure, three bibliographic references.

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- 49 -

USSR

UDC 669.018.8:669.183.046.51:669.784

OKENKO, A. P., PIROGOV, N. A., SABININA, T. B., KRYAKOVSKIY, YU. V., and
TYURIN, YE. I., Moscow Institute of Steel and Alloys

"The Effect of Boron on the Separation Process of Carbides in Kh23N18 Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1,
1973, pp 142-145

Abstract: A study was made of Kh23N18 steel without boron addition and with small boron additions (0.0012%). The VEMV-100A electron microscope was used. Boron was shown to inhibit the separation process of carbides. On cooling, after preliminary heating to 1200°C, the $M_{23}C_6$ carbide in the steel with boron began to separate at a lower temperature ($\sim 1050^\circ\text{C}$) than in the steel without boron ($\sim 1100^\circ\text{C}$). Boron also affected the character of the distribution of carbide along the boundaries and in the body of the austenite grains. The indicated phenomena explain the improved hot plasticity of Kh23N18 steel in the presence of small addition of boron. Five figures, four bibliographic references.

1/1

Acc. Nr:

AP0038559

Abstracting Service:

CHEMICAL ABST.

4/70

Ref. Code:

UR0366

* 78800s Interaction of diacetylenic ketones with amines.

Vereshchagin, L. I.; Bol'shedvorskaya, R. L.; Okhapkina, L.

L. (Inst. Nefte- Uglekhim. Sin., Irkutsk, USSR). Zh. Org.

Khim. 1970, 6(1), 32-6 (Russ). The reaction of $RCOC:CCl-$

CPh (I) (R is Ph or 2-furyl) with secondary amines (HNEt₂,

piperidine, or morpholine) gave, instead of the expected amino-

addn. products, 2-(R-substituted)-6-phenyl-4-pyrones (II) and

smaller amts. $RCOCH_2COCH:CXPh$ (III) (X is NEt₂, mor-

pholino, or piperidino). The hydrolysis of III (R = Ph, X =

NEt₂) with dil. H₂SO₄ gave II (R = Ph). The reaction of I

with PhNH₂ gave 2,6-diphenyl-4-phenyliminopyran (IV). Con-

densation of BzC:CCH₂Bz with PhNH₂ gave IV. Analogously,

1-phenyl-6-(2-furyl)-4-phenyliminopyran was prepd. CPJR

ALS

REEL/FRAME

19731737

7

USSR

UDC: 534.222.2

KASHIRSKIY, A. V., ORLENKO, L. P., and OKHITIN, V. N.

"Effect of the Equations of State on the Dispersion of Detonation Products"

Moscow, Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, No 2, 1973, pp 165-170

Abstract: Results are given in this paper of the numerical solution of problems of the dispersion of detonation products for various forms of the equation of state. Recognizing that a number of different equations of state have been advanced by the literature on detonation products, the authors select the simplest form of the equation which provides sufficient accuracy for the practical solution of problems on detonation product dispersion. An expression for the logarithmic slope of the isentrope is also obtained. Curves are plotted for the pressure, density, and mass velocity spectra for plane, cylindrical, and spherical detonation waves. The analysis shows that the equation of state in simple form and the expression obtained for the isentrope can be used for computing explosion problems with a sufficient degree of accuracy.

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UDC 534.222

USSR

LYAKHOV, G. M., OKHITIN, V. N., CHISTOV, A. G., Moscow

"Shock Waves in Soil and in Water Near the Detonation Point"

Moscow, Zhurnal Prikladnoy mekhaniki i tekhnicheskoy fiziki, No 3, 1972, pp 151-159

Abstract: A study was made of the problem of propagation of a plane shock wave in soil and in water by the characteristics method using a computer. The soils were considered as multicomponent media in accordance with the previously proposed model [G. M. Lyakhov, Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, No 1, 1959; Osnovy dinamiki vzryva v gruntakh i zhidkikh sredakh, Nedra Press, Moscow, 1964]. The wave parameters and the dimensions of the gas chamber were compared in soils with different component contents and in water. The calculated wave parameters in three media near the detonation point correspond to the experimental data showing that p , u and D (the pressure and velocity of the particles and the particles and detonation point, respectively) at the front in water saturated soil with $\alpha_1 = 0$ (no gaseous component) have larger values than in water. Even a small amount of air in water saturated soil leads to a noticeable decrease in p , u , D . On going away from the detonation point, the intensity of the decrease in these values in the soil containing air by comparison with soil where $\alpha_1 = 0$ increases. The time of effect of the wave increases with distance.

USSR

UDC 543.424.547.414.8

LEVIN, A. A., KHUTORETSKIY, V. M., OKHLOBSTINA, L. Y., and SHLYAPOCHNIKOV, V. A., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR

"Raman Spectra of Polynitro- and α -Halogenopolynitroalkanes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71, PP 2575-2577

Abstract: The article gives the first results of a study of the intensities of a number of Raman spectral lines of polynitro- and α -halogenopolynitroalkanes and previously unpublished Raman spectra for $\text{IC}(\text{NO}_2)_3$, $\text{FC}(\text{NO}_2)_3$, $\text{CH}_3\text{CH}(\text{NO}_2)_2$, $\text{ClCH}(\text{NO}_2)_2$, $\text{FCH}(\text{NO}_2)_2$. Intensities were measured for lines of the symmetric stretching and deformation vibrations of C-NO_2 groups. Analysis of the results shows that in the considered series of compounds the line intensities vary within rather a wide range. It is suggested that interaction of the nitro groups with halogen atoms leads to significant changes in the electronic properties of α -halogenopolynitroalkane molecules. An increase in intensities is mainly due to a decrease in the electron-acceptor properties of the substituent and the degree of its polarizability.

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1/2 015 UNCLASSIFIED PROCESSING DATE--ZONOV70
TITLE--DIPOLE MOMENTS OF STEREOISOMERIC BETA-CHLOROVINYLMERCURY CHLORIDES
-U-
AUTHOR--(03)-KULODYAZHNYI, YU.V., GARNOVSKIY, A.D., OKHLOBYSTIN, O.YE.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKADE. NAUK SSSR 1970, 191(6), 1322-3 (PHYS. CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIPOLE MOMENT, ISOMER, VINYL COMPOUND, ORGANOMERCURY COMPOUND,
CHLORINATED ALIPHATIC COMPOUND, DIELECTRIC PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0215 STEP NO--UR/0020/70/191/006/1322/1323
CIRC ACCESSION NO--AT0132487

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV79

2/2 015

CIRC ACCESSION NO--ATO132487

ABSTRACT/EXTRACT--(U) GP-O-

ABSTRACT. THE FOLLOWING DIPOLE MOMENTS (IN
D) WERE CALCD. FROM DIELEC. DATA IN C SUB6 H SUB6 AT 250DEGREES: CIS
CLCH:CHHGCL 2.92; TRANS ISOMER 1.81; AND 1:1 MIXT. OF THE ISOMERS (H.
78DEGREES) 2.79. SINCE THE VALUE OF THE DIPOLE MOMENT IN THIS MIXT. IS
CLOSE TO THAT OF THE PURE CIS FORM, THIS METHOD IS UNDERSIARBLE FOR
IDENTIFICATION PURPOSES. FACILITY: ROSTOV.-NA-DONU GOS. UNVI.,
ROSTOV-CN-DCN, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANISM OF NUCLEOPHILIC SUBSTITUTION -U-
AUTHOR--(04)-BILEVICH, K.A., BUBNOV, N.N., OKHLOBYSTIN, O.YU., RADZHABOV,
N.G.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSR 1970, 191(1), 119-21 (PHYS CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BENZENE DERIVATIVE, CHLORINATED ORGANIC COMPOUND, FREE
RADICAL, CHEMICAL REACTION MECHANISM, EXCHANGE REACTION, REACTION
KINETICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0712 STEP NO--UR/0020/70/191/001/0119/0121
CIRC ACCESSION NO--AT0124382
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 015

CIRC ACCESSION NO--AT0124382

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FROM DATA OF THE RATE OF INITIAL FORMATION OF ARO RADICALS AS RELATED TO CONC. OF ARO PRIME NEGATIVE ION AND TRITYL CHLORIDE IN TETRAHYDROFURAN SOLN. AT VARIOUS CONCNS. IN SOLN. IT WAS CONCLUDED THAT THE FORMATION OF SUCH ARO RADICALS OCCURS BY 2 PATHS. THEY FORM ACCORDING TO A CARBONIUM MECHANISM THAT IS KINETICALLY IDENTICAL WITH THE SWAIN TYPE REACTIONS, AND THEY ALSO FORM FROM INTERACTION OF THE ARO PRIME NEGATIVE ION WITH TRITYL CATION FORMED BY DISSOCN. OF PH SUB3 CCL, WHICH IS A PURELY S SUBN 1 INGOLD TYPE REACTION OF 1ST ORDER IN RESPECT TO SUBSTRATE AND ZERO ORDER IN RESPECT TO THE NUCLEOPHILE. THE CARBONIUM PORTION OF THE PROCESS IS DESCRIBED BY SUMMARY 3RD ORDER KINETICS: 1ST ORDER IN RESPECT TO THE HALIDE AND 2ND ORDER IN RESPECT TO PHENOXIDE ION. THE REACTION STUDIED WAS THAT OF PH SUB3 CCL AND P,ME SUB3 CC SUB6 H SUB4 OK. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTRAMOLECULAR COORDINATION IN ORGANOMETAL, METALLOID, COMPOUNDS -U-
AUTHOR--(03)-PROKOFYEV, A.K., BREGADZE, V.I., GKHLOBYSTIN, O.YU.
COUNTRY OF INFO--USSR
SOURCE--USP. KHIM. 1970. 39(3), 412-43
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COORDINATION CHEMISTRY, ORGANOMETALLIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2047 STEP NO--UR/0074/70/039/003/0412/0443
CIRC ACCESSION NO--AP0125635
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125635

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A REVIEW WITH 210 REFERENCES THROUGH PART OF 1969, COVERING THE NATURE OF INTRAMOL. COORDINATION, ITS RELATION TO PHYS. PROPERTIES OF MOLLS. AND ITS CHEM. CONSEQUENCES. SUCH COORDINATION IS DISCUSSED AS THE DRIVING FORCE IN ELIMINATIONS. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/3 029 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FLUORINATION OF SALTS OF ALPHA, BETA, AND GAMMA SUBSTITUTED
GEMDINITRO COMPOUNDS BY PERCHLORYL FLUORIDE -U-
AUTHOR-(03)-OKHLOBYSTINA, L.V., KHUTORETSKIY, V.M., FAYNZILBERG, A.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 387-92
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORONITRO COMPOUND, CHEMICAL SYNTHESIS, NITRILE, ORGANIC
NITRO COMPOUND, AMINE DERIVATIVE, NMR SPECTRUM, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0614 STEP NO--UR/0062/70/000/002/0387/0392
CIRC ACCESSION NO--AP0119721
UNCLASSIFIED

2/3 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING FCLO SUB3 INTO 7.2 G (O SUB2 N) SUB2 C (HN SUB4) CONH SUB2 IN (CH SUB2 OME) SUB2 2 HR AT 20DEGREES GAVE AFTER DILN. AND EXTN. WITH ET SUB2 O 5.6PERCENT CF (NO SUB2) SUB2 CONH SUB2, M. 29DEGREES. SIMILARLY (O SUB2 N) SUB2 C (HN SUB3 ET) CONHET GAVE 14PERCENT CF (NO SUB2) SUB2 CONHET, B SUB2 102-8DEGREES, M. 47DEGREES. REACTION OF FCLO SUB3 WITH A SOLN. OF (O SUB2 N) SUB2 CHACN 4 DAYS GAVE, IN HOCH SUB2 CH SUB2 OME, 74PERCENT FC (NO SUB2) SUB2 C (:NH) OCH SUB2 CH SUB2 OME, B SUB2 85-90DEGREES, N PRIME20 SUBD 1.4370. SIMILARLY, (O SUB2 N) SUB2 CKCH SUB2 C (NO SUB2) SUB2 ME IN THF WITH FCLO SUB3 3 HR AT 0-2DEGREES GAVE 29PERCENT 1,FLUORO,1,1,3,3,TETKANITROBUTANE, M. 37-8DEGREES. K SALT OF (O SUB2 N) SUB2CHCH SUB2 OH AND FCLO SUB3 SIMILARLY GAVE IN 13 HR AT 20DEGREES 20PERCENT CF (NO SUB2) SUB2 CH SUB2 OH, B SUB1 54 DEGREES. FCLO SUB3, PASSED INTO KC (NO SUB2) SUB2 CH SUB2 OME IN ME SUB2 CO GAVE 64PERCENT FC (NO SUB2) SUB2 CH SUB2 OME, B SUB28 75-7DEGREES, N PRIME20 SUBD 1.4062, D PRIME20 1.3855. FCLO SUB3 PASSED INTO KC (NO SUB2) SUB2 CH SUB2 HNAC IN ME SUB2 NCHO 1.5 HR, AT 20DEGREES GAVE 88PERCENT CF (NO SUB2) SUB2 CH SUB2 NACN, M. 55DEGREES. (O SUB2 N) SUB2 CHCH SUB2 HN8Z IN MECH TREATED WITH MEONA, THEN FCLO SUB3 1.5 HR, GAVE 82PERCENT CF (NO SUB2) SUB2 CH SUB2 NH8Z, M. 89DEGREES. KC (NO SUB2) SUB2 CH SUB2 CH SUB2 CN AND FCLO SUB3 IN ME SUB2 CO OVERNIGHT GAVE 49PERCENT FC (NO SUB2) SUB2 CH SUB2 CH SUB2 CN, M. 21DEGREES. K SALT OF 5,5,DINITRO,2,PENTANONE AND FCLO SUB3 IN THF 3 HR GAVE 65PERCENT CF (NO SUB2) SUB2 CH SUB2 CH SUB2 AC, B SUB2 71-4DEGREES, B SUB4 86-7DEGREES, 1.4382, 1.3577.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

3/3 029

CIRC ACCESSION NO--AP0119721

ABSTRACT/EXTRACT--(O SUB2 N) SUB2 CHCH SUB2 CH SUB2 BZ SIMILARLY TREATED
WITH NaOH IN HOCH SUB2 CH SUB2 OME, FOLLOWED BY FCLO SUB3, GAVE
93PERCENT CF(NO SUB2) SUB2 CH SUB2 CH SUB2 BZ, M. 52.5DEGREES. FCLO
SUB3 AND KC(NO SUB2) SUB2 CH SUB2 CH SUB2 NHAC IN (CH SUB2 OME) SUB2
GAVE 93PERCENT CF(NO SUB2) SUB2 CH SUB2 CH SUB2 NHAC, B SUB2
125-30DEGREES, 1.4603. IR AND NMR SPECTRAL DATA ARE GIVEN.
FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.

AT0049881

Abstracting Service
CHEMICAL ABST 5/70

Ref. Code

4P00204

105739n EPR study of single-electron transfer reactions in a series of polynitro- and halopolynitroalkanes. Shapiro, B. I.; Okhlobastina, L. V.; Khutaretzki, V. M.; Fainzil'berg, A. A.; Syreim, Ya. K. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). Dokl. Akad. Nauk SSSR 1975, 190(1), 151-4 [Phys Chem] (Russ). EPR signals were detected at -30° in the reaction products of 2,4,6-tri-*tert*-butylphenoxyl anion with the indicated substances: $(O_2N)_2C$ (I), $ClC(NO_2)_2$ (II), $FC(NO_2)_2$, and $MeC(NO_2)_2$ (III), as well as $FC(NO_2)_2Cl$, $F_2C(NO_2)_2$, $PhC(NO_2)_2F$ (IV), $MeC(NO_2)_2Cl$, $MeC(NO_2)_2F$, and $Me_2C(NO_2)_2$; at room temp. the EPR signal was obtained only from I, II, III, and IV systems. The uv spectra of these were also reported for detection of the polynitro anions; these were absent in cases of $PhC(NO_2)_2^-$ and $MeC(NO_2)_2^-$ only. The results confirmed that the anion-radical mechanism describes the nature of the reaction of the polynitro compds. with the anion shown above.

G. M. Kosolapoff

REEL/FRAME

19801813

USSR

UDC (539.551+531.424):(546.24+546.683-143)

ANDRIANOVA, T. N., ALEKSANDROZ, A. A., OKHOMIN, V. S., RAZUMEYCHENKO, L. A.,
PANINA, Z. I.

"Viscosity and Density of Melts in the Thallium-Tellurium System"

Teplofizika Vysokikh Temperatur, Vol 9, No 5, 1971, pp 934-937.

Abstract: Results are presented from studies of the viscosity and density of melts in the thallium-tellurium system in the concentration interval from 32 at.% Te to 100% Te and in the temperature interval from the melting point to 1,300°K. Analysis of the isotherms of the properties studied shows the existence in the liquid phase of the stable compound Tl_2Te , which does not dissociate over a broad temperature range. An analysis is presented of structural changes in melts of the concentrations studied.

1/1

USSR

UDC 681.2.087.92-932

OKHOROKOV, G. N.

"Multiple-Turn Variable Resistor"

USSR Author's Certificate No 284109, Filed 24/09/68, Published 4/01/71,
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychis-
litel'naya Tekhnika, No 11, 1971, Abstract No 11 A169 P).

Translation: A multiple-turn variable resistor is suggested which contains a stator and rotor made in the shape of bodies of rotation of an electrical insulating material; a two-row spiral resistive element, one row of which is located on the surface of the stator, turned toward the rotor; and a contact element connecting the turns of the various rows of the spirals of the resistive element. In order to simplify the design and increase the reliability, the stator is placed inside the rotor, the turns of the spiral of the second row of the resistive elements are placed between the turns of the first row, and there is a spiral channel on the inside surface of the rotor, the direction of which is opposite to the direction of the spiral of the resistive element. The contact element mentioned moves in the spiral channel of the rotor. 7 Figures.

1/1

USSR

UDC: 62-502

DORRER, G. A., OKHORZIN, V. A., Institute of Physics imeni L. V. Kirenskiy, Siberian Department of the Academy of Sciences of the USSR, Krasnoyarsk

"Concerning a Problem in Synthesis of Systems With Distributed Parameters on the Basis of the Theory of Moments"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 72, pp 112-119

Abstract: The problem of calculating the dynamic characteristics of plants with distributed parameters and systems for controlling them remains one of the most important problems in design of equipment for chemical technology. One of the effective methods of calculating the dynamics of plants of this type is based on utilizing moment characteristics. In essence, the moments of the impulse transfer function of a plant (inertia) are used to evaluate the dynamic properties of this plant. The further development of this computational method involves extension to problems of analysis and synthesis of systems for control of industrial plants. In this paper one of the possible approaches to such problems is suggested, based on the theory of the Z -problem of moments. Comparatively simple formulas are derived for the function which gives the solution of the finite-dimensional problem of moments in space $L^2(0,T)$, and for determining the conditions of solvability of this problem. The results are utilized

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USSR

DORRER, G. A. and OKHORZIN, V. A., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 72, pp 112-119

in synthesizing an invariant system for controlling a plant with distributed parameters. The problem of synthesis is solved exclusively on the basis of information on the moments of the impulse transfer function of the plant. The authors thank B. N. Devyatov for taking part in formulation of the problem and for discussing the results.

USSR

UDC 621.394.5

ZAMRIY, LEONID PANOVICH: ZAKHAROV, ANATOLIY IVANOVICH: OKHORZIN, VIKTOR
MIKHAYLOVICH

"Elements Of The Theory Of The Transmission Of Discrete Information"

Elementy teorii peredachi diskretnoy informatsii (cf. English above), Moscow,
 Izd. "Svyaz", 1972. 232 pp. ill. 79 ref. 1 r. 15 k.

Abstract: In the book an account is given of the basic problems in the transmission of discrete information: the statistical characteristics of communication channels, codes, and systems. An increase of the reliability of transmission of discrete information is considered, based on the statistical characteristics of real communication channels. Methods and devices are described for a statistical study of communication channels intended for data transmission; the principal results are given of studies of cable, radio relay, tropospheric, and shortwave channels. On the basis of the processing and generalization of the results of statistical testing of the channels, methods are presented for evaluation of the effectiveness of groups of error correcting codes and a calculation of the parameters of some systems of transmission of discrete information. The book is intended for development-engineers of apparatus for data transmission, scientific workers, graduate students, and students of advanced courses of corresponding specialities.

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USSR

ZAMRIY, LEONID PANOVICH, et al., Elementy teorii peredachi diskretnoy informatsii, Moscow, Izd. "Svyaz", 1972. 232 pp. ill. 79 ref. 1 r. 15 k.

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USSR

ZAMRIY, LEONID PANOVICH, et al., Elementy teorii peredachi diskretnoy informatsii, Moscow, Izd. "Svyaz", 1972. 232 pp. ill. 79 ref. 1 r 15 k.

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ZAMRIY, LEONID PANOVIKH, et al., Elementy teorii peredachi diskretnoy informatsii, Moscow, Izd. "Svyaz", 1972. 323 pp. ill. 79 ref. 1 r 15 k.

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ZAMRIY, LEONID PANOVICH, et al., Elementy teorii peredachi diskretnoy informatsii, Moscow, Izd. "Svyaz", 1972. 232 pp. ill. 79 ref. 1 r 15 k.

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USSR

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USSR

ZAMRIY, LEONID PANOVIKH, et al., Elementy teorii peredachi diskretnoy informatsii, Moscow, Izd. "Svyaz", 1972, 323 pp. ill. 79 ref. 1 r 15 k.

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OKHOTIN, A. S.

TECHNICAL TRANSLATION

75TC-ET-23- 1023-72

ENGLISH TITLE: THERMOELECTRIC GENERATORS

FOREIGN TITLE: ТЕРМОЭЛЕКТРИЧЕСКИЕ ГЕНЕРАТОРЫ

AUTHOR: ~~A. S. Okhotin~~ A. A. Yefremov, V. S. Okhotin,
and A. S. Pushtarskiy

SOURCE: Термоэлектрические Генераторы, 1971

Translated for ESTC by ACSI

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information. Requests for additional copies of this document should be addressed to Department A, National Technical Information Service, Springfield, Virginia 22151. Approved for public release; distribution unlimited.

USSR

UDC:[537.226+537.311.33]:[537+535]

KULIYEV, A. Z., OKHOTIN, A. S., ASADOV, D. A., and KAKHRAMANOV, K. Sh.

"Effect of Deformation on the Thermoelectrical Characteristics of $\text{Bi}_2\text{Te}_3\text{-Bi}_2\text{Se}_3$ "

V sb. Tenlofiz. svoystva tverd. tel (Thermophysical Characteristics of Solids--collection of works) Kiev, Nauk. dumka, 1971, pp 30-33 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E1075)

Translation: The effect of external, single-sided pressure (up to 250 kg/cm^2) on the electrical conductivity (σ), the thermal emf coefficient (α), and the thermal conductivity (κ) of a solid solution of n-type 50% $\text{Bi}_2\text{Te}_3\text{-20% Bi}_2\text{Se}_3$ are investigated in the temperature interval of $300\text{-}500^\circ \text{K}$. It is established that at 300°K , with an increase in load from 0 to 100 kg/cm^2 , σ increases linearly to more than double its value. With elevations in temperature, this type of sharp increase in σ is not observed. The change in α did not exceed 10%. An increase in κ is also observed with increasing deformation, reaching a maximum at 100 kg/cm^2 . The reduction of σ and κ at pressures $>100 \text{ kg/cm}^2$ is explained by electron and phonon dispersion in the defects formed. G. I. Makovetskiy.

1/1

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OKHOTIN, A.S.

Semiconductor/
electronics

JPRS 55583
30 March 1972

METHODS OF INVESTIGATING THE THERMOELECTRIC
PROPERTIES OF SEMICONDUCTORS

Translation of Chapter 5 of Russian-language book by V. M.
Glaesov, A. S. Okhotin, R. P. Petrovskaya, A. S. Pushkarskiy,
Metody issledovaniya termoelektricheskikh svoystv tolyuro-
vodnikov, 1969, Atomizdat Press, Moscow, pp 2, 131-167.
UDC 621.314.59

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[X - USSR - P]

USSR

UDC: 621.315.592

GORBACHEV, V. V., OKHOTIN, A. S., MALOVETSKAYA, V. M., and PUTILIN,
I. M. Moscow Institute of Steel and Alloys

"Investigating the Infrared Reflection Spectra of Tin Telluride"

Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972,
pp 1034-1036

Abstract: Because of the high concentration of free charge carriers in degenerate semiconductors, most methods for determining the basic parameters of the semiconductor material become complex. Hence, the optical method of investigation is preferred. In this paper, a description is given of experiments for finding the effective mass of the holes and the relaxation time in tin telluride (SnTe) by experimentally measuring infrared reflection spectra. In these experiments, the effect of the charge carrier concentration on the position of the plasma minimum was investigated. The reflection coefficient was measured in monocrystalline SnTe, grown by the Bridgeman method, with concentrations of $3.25 \cdot 10^{20}$ to $6.25 \cdot 10^{20}$ per cc. Specimens were cut in the form of plates 0.5 mm thick, and the carrier concentration in them was determined by the Hall effect.

1/1

UNCLASSIFIED PROCESSING DATE--17JUL70
TITLE--CALCULATION OF THE VISCOSITY OF LOW ALKALINE AND ALKALINE FREE
GLASSES --U-
AUTHOR--OKHOTIN, M.V., ANDRYUKHINA, T.D.
COUNTRY OF INFO--USSR DECEASED 1971
SOURCE--STEKLK KERAM. 1970, 27(1), 12-13
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--GLASS VISCOSITY, ALKALI FREE GLASS, GLASS COMPOSITION, SODIUM
OXIDE, CALCIUM OXIDE, MAGNESIUM OXIDE, ALUMINUM OXIDE, CALCULATION
CONTROL MARKING--NC RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/0367 STEP NC--UR/0072/70/027/001/0012/0013
CIRC ACCESSION NO--AP0053346

Acc. Nr:

AP0053346

Abstracting Service:

CHEMICAL ABST. 4/70

Ref. Code:

UR0072

DECEASED 1971

82423p Calculation of the viscosity of low-alkaline and alkali-free glasses. ~~Okhotin, M. V.~~ Andryukhina, T. D. (USSR). *Steklo Keram.* 1970, 27(1), 12-13 (Russ). The viscosity (η) of glasses contg. 0-5% Na_2O was calcd. according to the equation $T = AX + BY + CZ + D$ where T = temp. corresponding to a determinate value of η , $X = \text{Na}_2\text{O}$, $Y = \text{CaO} + \text{MgO}$, and $Z = \text{Al}_2\text{O}_3$ (wt. %) content. The values of the consts. A , B , C , and D that were detd. exptl. for $\log \eta$ 7-14 are given. Abram Chertkoff

REEL/FRAME
19830367

7

USSR

UDC 681.327

OMELIN, V. M., OKHOTIN, S. N., ROMANOV, V. V., Engineers, PETRENKO, A. I.,
Doctor of Technical Sciences, FESECHKO, V. A., Candidate of Technical Sciences

"All-Purpose Graphical Data Input Device for a Digital Computer"

Moscow, Pribery i Sistemy Upravleniya, No 2, February 1971, pp 6-7

Abstract: A graphical data conversion device designed for converting graphical documents to code has been developed at the All-Union Scientific Research Institute of Exploration Geophysics jointly with the Department of Technical Electronics of Kiev Polytechnical Institute. Its technical parameters make it possible to read a variety of graphical data including single curves, families of curves, and various sets of outlines. A block diagram of the device, its operating time diagram, data allocation in memory, and basic technical specifications of the device are presented. It is pointed out that in contrast to the Luch and Grafk graphical data input devices based on the same principle of color recognition, the present design achieves parallel color recognition so that it can read six colors simultaneously -- black, red, blue, green, yellow, and one other arbitrary color. The basic units of the device are an electro-mechanical scanner with an optical system and tape drive, a video pulse shaper,

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USSR

OMELIN, V.M., et al., Pribory i Sistemy Upravleniya, No 2, February 1971,
pp 6-7

a color separating unit, encoding and output units, and a monitoring and
control unit.

2/2

OKHOTIN, V. S.

TECHNICAL TRANSLATION

FTIC-BT-23- 1023-72

ENGLISH TITLE: THERMOELECTRIC GENERATORS

FOREIGN TITLE: ТЕРМОЭЛЕКТРИЧЕСКИЕ ГЕНЕРАТОРЫ

AUTORS: A. S. Okhotin, A. A. Yefremov, V. S. Okhotin,
and A. S. Pushkarskiy

SOURCE: Термоэлектрические генераторы, 1973

Translated for FTIC by ACS

NOTICE

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USSR

UDC 621.362.2

ANDRIANOVA, T. N., ALEKSANDROV, A. A., OKHOTIN, V. S., PANINA, Z. I.,
RAZUMEYCHENKO, L. A.

"Investigation of Semiconductor Systems Based on Sb_2Se_3 in the Molten State"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute),
1970, vyp. 75, pp 192-196 (from RZh-Elektrotehnika i Energetika, No 1,
Jan 71, Abstract No 1A159)

Translation: An investigation is made of the effect of various elements on the structure of antimony selenide in the molten state. The kinematic viscosity and density of melts of Sb, Se, Zn, Cu, Ga, In, Te and Sn in antimony selenide were measured. The change in structure of melts of 80 at.% Sb_2Se_3 + 20 at.% Ga and 80 at.% Sb_2Se_3 + 20 at.% Sn takes place over a narrow temperature interval of $\Delta t \approx 50^\circ K$, while the structure of a melt of 80 at.% Sb_2Se_3 + 20 at.% In varies continuously over the entire temperature interval from 950 to $1300^\circ K$. Two illustrations, bibliography of two titles. A. Kh. Cherkasskiy.

1/1

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALGORITHM FOR THE AUTONOMOUS CONTROL OF THE ARRIVAL OF A SPACECRAFT
AT A GIVEN LANDING POINT -U-
AUTHOR-(03)-OKHOTSIMSKIY, D.YE., BUKHARKINA, A.P., GOLUBEV, YU.F.
COUNTRY OF INFO--USSR
SOURCE--KOSMICHESSKIE ISSLEDOVANIYA, VOL. 8, MAR.-APR. 1970, P. 169-188.
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., SPACE TECHNOLOGY
TOPIC TAGS--ALGORITHM, AUTOMATIC CONTROL, SPACECRAFT LANDING, SATELLITE
MOTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1757 STEP NO--UR/0293/70/008/000/0169/0188
CIRC ACCESSION NO--AP0115586
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A CONTROL ALGORITHM ENSURING THE GEOGRAPHICALLY SPECIFIED LANDING OF A SPACECRAFT ACCORDING TO A SCHEME OF INITIAL REENTRY WITH EXIT FROM THE ATMOSPHERE, FOLLOWED BY FINAL REENTRY AND LANDING. THE MOTION OF THE SPACECRAFT IN BOTH REENTRY SEGMENTS IS ANALYZED. COMPUTER SIMULATION OF THE CONTROL ALGORITHM DEMONSTRATES THAT A HIGH DEGREE OF BOTH LONGITUDINAL AND LATERAL LANDING ACCURACY CAN BE ACHIEVED EVEN FOR LARGE DISTANCES OF THE INITIAL REENTRY POINT TO THE LANDING AREA, REGARDLESS OF THE LACK OF COMPLETE KNOWLEDGE OF ATMOSPHERIC DENSITY DISTRIBUTION.

UNCLASSIFIED

USSR

UDC 546.87:548.55

PILAT, I. M., CHAYKA, S. V., OKHREM, V. G., Chernovtsy State University

"The Effect of the Degree of Purification of Bismuth Single Crystals on the Anisotropy of Thermo-emf"

Moscow, Neorganicheskiye Materialy, Vol 6, No 5, May 70, pp 982-983

Abstract: A study was made of the relationship between the anisotropy of thermo-emf α and the degree of purification of Bi single crystals. It was found that in temperature intervals 120-200°K and 280-400°K α is practically independent of temperature, but shows different values which are related to the purity of samples. The studies were carried out on samples cut parallel to the trigonal axis and perpendicular to it. It is concluded that in order to obtain high-purity Bi suitable for thermoelectric and thermomagnetic studies, it is necessary to use double drop-melting and zone-melting (at least 50 passages) methods.

1/1

1/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--THE EFFECT OF THE DEGREE OF PURIFICATION OF BISMUTH SINGLE CRYSTALS
ON THE ANISOTROPY OF THERMO EMF -U-

AUTHOR--(03)-PILAT, I.M., CHAYKA, S.V., OKHREM, V.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY
70, PP 982-983

DATE PUBLISHED----MAY70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--BISMUTH ALLOY, METAL SINGLE CRYSTAL, METAL ZONE MELTING, HIGH
PURITY METAL, CRYSTAL ANISOTROPY, METAL MELTING, THERMOELECTROMOTIVE
FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/1542

STEP NO--UR/0363/70/006/005/0982/0983

CIRC ACCESSION NO--AP0133465

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE RELATIONSHIP BETWEEN THE ANISOTROPY OF THERMO EMF AND THE DEGREE OF PURIFICATION OF BI SINGLE CRYSTALS. IT WAS FOUND THAT IN TEMPERATURE INTERVALS 120-200DEGREESK AND 280-400DEGREESK A IS PRACTICALLY INDEPENDENT OF TEMPERATURE, BUT SHOWS DIFFERENT VALUES WHICH ARE RELATED TO THE PURITY OF SAMPLES. THE STUDIES WERE CARRIED OUT ON SAMPLES CUT PARALLEL TO THE TRIGONAL AXIS AND PERPENDICULAR TO IT. IT IS CONCLUDED THAT IN ORDER TO OBTAIN HIGH PURITY BI SUITABLE FOR THERMOELECTRIC AND THERMOMAGNETIC STUDIES, IT IS NECESSARY TO USE DOUBLE DROP MELTING AND ZONE MELTING (AT LEAST 50 PASSAGES) METHODS. FACILITY: CHERNOVTSY STATE UNIVERSITY.

UNCLASSIFIED

USSR

UDC: 537.533.2:669.01

SAMSONOV, G. V., OKHREMCHUK, L. N., UPADKHAYA, G. Sh., and NAUMENKO, V. Ya.

"Work Function of Titanium and Niobium Carbides in the Homogeneity Region"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 8, No. 4, 1970, pp 921-922

Abstract: This brief paper describes experiments performed on titanium and niobium monocarbides and undertakes to explain the basic expressions of the variations in their work function, along with the variations in their other physical characteristics such as electrical resistance, thermal conductivity, and the like. In this work the characteristics of the carbide phase electron structure were taken into account. The original specimens were in the form of cylinders 8 mm in diameter and 10 mm high. The work function was measured by using full current flow in a temperature interval of 1400-2100° K. The authors find that their results agree with those obtained in research on the thermoemission of Nb₂C.

1/1

OKHREMCHUK, L. N.

TECHNOLOGY OF PRODUCING NEW MATERIALS

Translation of Russian-language collection: Tekhnologiya
Polucheniya Novykh Materialov, 1972, Kiev.

JPRS 59873
23 August 1973

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[1 - USSR - 1]

USSR

UDC 547.341

MASHLYAKOVSKIY, L. N., ZAGUDAYEVA, T. A., IONIN, B. I., OKHRIMENKO, I. S.,
and PETROV, A. A., Leningrad Technological Institute Imeni Lensovet

"Synthesis of Derivatives of Thionephosphonic Acids With Conjugated Dienes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2648-2656

Abstract: Gradual replacement of the halogen atoms in PSCl_2 by alkoxy radicals produced new ester-acid chlorides and diesters of 2-methylbutadiene-1,3-thionephosphonic acid and bis-1,3-dienethionephosphonates. The ester acid chlorides of 1,3-dienethionephosphonic acids have higher thermal stability than the phosphoryl analogs because of the weaker basic properties of the P:S group and lower electrophilic strength of the phosphorus atom. Comparative analysis of the PMR spectra of the derivatives of 2-methylbutadiene-1,3-phosphonic and thionephosphonic acids showed that these compounds represent mixtures of various quantities of cis- and trans- isomers. The latter are stabilized by an intramolecular hydrogen bond with the chlorine atoms of the PSCl_2 group. P:S participates to a considerably lesser degree in formation of hydrogen bonding than the P:O group.

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USSR

UDC 547.341

MASHLYAKOVSKIY, L. N., ZAGUDAYEVA, T. A., IONIN, B. I., and
OKHRIMENKO, I. S., Leningrad Technical Institute meni Lensovet

"Synthesis of Ester Acid Chlorides, Mixed Esters and Amidoesters of
1,3-Dienylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71,
pp 330-335

Abstract: The reaction of acid dichlorides with primary or secondary al-
cohols in presence of tertiary bases leads to replacement of Cl atoms
with formation of esters of acid chlorides, mixed esters and ester ami-
des 1,3-dienylphosphonic acids. The following compounds were syn-
thesized formula, b.p./mm, d_4^{20} , and n_D^{20} being reported $CH_2=CHC(CH_3)=$
 $CHP(O)(CC_2H_5)Cl$, 88°/1.5, 1.1441, 1.5055; $CH_3CH=CHCH=CHP(O)(CC_2H_5)Cl$,
108-110°/2, 1.1622, 1.5172; $CH_3CH=CHCH=CHP(O)(OC_3H_7-iso)Cl$, 135-137°/4,
1.1167, 1.5002; $CH_2=CHCH=CHP(O)(CC_2H_5)N(C_2H_5)_2$, 109-111°/3.5, 1.0214,
1.4852; $CH_2=CHC(CH_3)=CHP(O)(OCH_3)CC_2H_5$, 85.5-86°/1, 1.0674, 1.4832;
 $CH_2=CHC(CH_3)=CHP(O)(OCH_3)O-iso-C_3H_7$, 91-93°/2, 1.0846, 1.4856;
 $CH_2=CHC(CH_3)=CHP(O)(OCH_3)N(C_2H_5)_2$, 93-94°/1, 1.0225, 1.4928,
 $CH_3CH=CHCH=CHP(O)(OCH_3)-iso-OC_3H_7$, 84-86°/3, 1.0519, 1.4797;
 $CH_2=CHCH=CHP(O)(OCH_3)CC_2H_5$, 79-80°/1, 1.0667, 1.4796.

1/1

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHOSPHINE OXIDES CONTAINING A 1,3-DIENYL GROUPING AT THE PHOSPHORUS
ATOM -U-
AUTHOR--(04)-MASHLYAKOVSKIY, L.N., IONIN, B.I., OKHRIMENKO, I.S., PETROV,
A.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40 (4), 804-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOSPHORUS OXIDE, DIENE, ORGANOMAGNESIUM COMPOUND, CATALYTIC
HYDROGENATION, BUTADIENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1371 STEP NO--UR/0079/70/040/006/0804/0808
CIRC ACCESSION NO--AP0128771
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128771

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO PHMGBR FROM 3 G MG PREPD. IN ET
SUB2 O. WAS ADDED WITH COOLING 10.8 G MECH:CHCH:CHP(O)CL SUB2, AND THE
MIXT. HEATED 3 HR, THEN REFLUXED IN (SHOWN ON MICROFICHE). THE CRUDE
REACTION PRODUCT OF II AND PHMGBR WAS TREATED WITH ALC. KOH 20 HR AT
ROOM TEMP. AND 0.5 HR AT 50DEGREES TO YIELD 22PERCENT CH
SUB2:CHCH:CHP(O)PH SUB2, M. 105-7DEGREES. THE PRODUCTS OF HYDROGENATION
WERE MIXED CIS-TRANS FORMS IN CASE OF DERIVS. OF 2,METHYL,1,3,BUTADIENE,
BUT IA WAS THE TRANS ISOMER, AS WAS ITS PRECURSOR DIENE DERIV.
FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--BUILDING PAINTS BASED ON MIXTURES OF AQUEOUS SOLUTIONS AND
DISPERSIONS OF FILM FORMING MATERIALS -U-
AUTHOR-(03)-OKHRIMENKO, I.S., VASILYEVA, T.P., VERKHOLANTSEV, V.V.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (2), 13-16
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CONSTRUCTION MATERIAL, PAINT, STYRENE, LATEX, POLYVINYL
ACETATE/(U)SKS30 STYRENE RUBBER, (U)SKS65GP STYRENE RUBBER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605019/B10 STEP NO--UR/0303/70/000/002/0013/0016
CIRC ACCESSION NO--AP0140908
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140908

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WATER SOL. PAINT FORMULATIONS
(DESIGNED FOR THE CONSTRUCTION INDUSTRY) WERE DEVELOPED FROM SKS-30 AND
SKS-65 GP LATEXES. THE ADVANTAGES OF THE PAINTS WERE NOTED. THE
PROPERTIES OF FILMS FORMED FROM AQ. SOLNS. OF PARTIALLY HYDROLYZED
POLY(VINYL ACETATE) AND OTHER POLYMER LATEX BLENDS WERE DISCUSSED.

UNCLASSIFIED

Organophosphorus Compounds

USSR

UDC 661.718.1

MASHLYAKOVSKIY, L. N. and OKHRIMENKO, I. S., Leningrad, Technological Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Phosphorus-Containing Oligoesters with 1,3-Diene Groupings in the Side Chain"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 43, No 1, Jan 70, pp 107-112

Abstract: P-containing oligoesters $-P(=O)(R)O(CH_2)_2(CH_2)_2O-$ with 1,3-diene groups R attached to P were synthesized by the polycondensation of diethyleneglycol in dichloroethane at 50-70° with the dichlorides $Cl_2P(=O)R$ of penta-2,3-diene-, 2-methyl-1,3-butadiene-, and buta-1,3-dienephosphonic acid. The three products obtained were viscous, transparent liquids. They polymerized to solid polymers on heating in the presence of peroxide or hydroperoxide initiators and on being applied in the form of an EtOH solution, formed three-dimensional polymer films that adhered well to metal and glass. By using benzoyl peroxide + dimethylaniline, polymerization could be carried out at room temperature. The capacity for polymerization depended on the structure of R; it decreased in the order $CH_2=CHCH=CH- > CH_2$
1/2

USSR

MASHLYAKOVSKIY, L. N., et al., Zhurnal Prikladnoy Khimii, Vol 43,
No 1, Jan 70, pp 107-112

$\text{=CHC(Me)=CH-} \rightarrow \text{MeCH=CHCH=CH-}$. A test on the polymer with R = MeCH=CHCH=CH- showed that it was non-inflammable.

2/2

USSR

UDC: 547.341

MASHLYAKOVSKIY, L.N., IONIN, B.I., OKHRIMENKO, I.S., and PETROV, A.A., Leningrad Technological Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized Education RSFSR

"Phosphine Oxides Containing 1,3-Diené Grouping at Phosphorus Atom"
Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 804-808

Abstract: A previous article by the authors reported the synthesis of individual 1,3-dienephosphine oxides by the interaction of unsaturated phosphonyl dichlorides with Grignard reagents. The present article gives more detailed information on the synthesis and structure of these compounds. The interaction of 1,3-dienephosphonic and chlorobutenephosphonic acid dichlorides with Grignard reagents with subsequent dehydrochlorination by alcoholic alkali gives previously undescribed tertiary phosphine oxides containing a 1,3-diene grouping at the phosphorus atom. The structure of the resultant phosphine oxides is confirmed by the results of catalytic hydrogenation.

The formation of compounds with the cis and trans configura-

1/2

USSR

MASHLYAKOVSKIY, L. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 804-808

tion with respect to the double bond in the α, β -position to phosphorus is explained on the basis of the idea of the bimolecular mechanism of trans-elimination and the influence of steric interactions of substituents at the β -carbon atom with the phosphorus-containing grouping.

2/2

.. 65 ..

Acc. Nr. **AP0036524**

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 24-27

STUDY OF THE STRUCTURE
OF FILMS OBTAINED FROM LATEX MIXTURES

V. V. Verkholantsev, I. S. Okhrimenko.

Summary

The structure of films obtained from binary mixtures of latices of butadiene-styrene rubber SKS-30 and polystyrene or polyvinyl chloride has been studied by a photometric method. The globule distribution in the SKS-30-polyvinyl chloride mixtures has been found to be nonuniform to a considerable degree and the penetration of elastomer segments into polystyrene to be sufficiently deep. The films with a nonuniform globule distribution are more reinforced and their nonuniformity can be controlled by addition of surfactants to latices.

D. A.

REEL/FRAME
19721372

7

Acc. Nr.

AP0055698

Abstracting Service:

CHEMICAL ABST.

6-70

Ref. Code

UR0460

112164z Copolymerization of oligo esters of 1,3-diene-phosphonic acids with unsaturated alkyd resins. Zagudaeva, T. A.; Printseva, Z. V.; Mashlyakovskii, L. N.; Okhrimenko, L. S. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad, USSR). Vysokomol. Soedin., Ser. B 1970, 12(1), 60-2 (Russ). Resin I: (I) (glycerol phthalate modified with dehydrated castor oil) was copolymerized with a diethylene glycol oligoester (II) of 2-methyl-1,3-butadiene-1-phosphonic acid in the presence of cumene hydroperoxide at 120°. Addn. of 0.5% 1,4-C₆H₄(OH)₂ (III) reduced the crosslinking rate. The copolymer rate of I with II was inversely proportional to II concn., presumably due to the high reactivity of II, which overshadowed the effect of III. The copolymer gave flame resistant, flexible, crosslinked polymers and films. CKJB

11

REEL/FRAME

19841007

CB 7

Acc. Nr.

AP0048809

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code

UR0080

91099q Phosphorus-containing oligomeric esters with 1,3-diene groups in the side chains. Mashivakovskii, L. N.; Okhrimenko, I. S. (Leningrad Tekhnol. Inst. im. Lensovet, Leningrad, USSR). Zh. Prikl. Khim. (Leningrad) 1976, 43(1), 107-12 (Russ). $[-PO(CH:CHR')(OCH_2CH_2)_2O-]_n$ (I), where R = R' = H, R = Me and R' = H, or R = H and R' = Me, and n is 2-4, were prepd. by polycondensation of $(R'HC:CR:CH)POCl_2$ with diethylene glycol. I were viscous, transparent liqs. sol. in alcs., chloro hydrocarbons, and $PhNO_2$, and insol. in Et_2O and hydrocarbons. I were readily gelatinized, even under N at room temp., and had Br nos. that were 50-70% of the theoretical, apparently due to the difficulty in brominating conjugated double bonds attached to P. I were hardened by heating in the presence of cumene hydroperoxide or $Bz_2O_2-PhNMe_2$ to give rigid, transparent films with good adhesion to glass and metal and high abrasion resistance. Hardened I (R = R' = H) does not burn after removal from a flame.

DBJR

REEL/FRAME

19800572

USSR

UDC: 621.73.043

OKHRIMENKO, Ya. M., SMIRNOV, O. M., BALAKIN, V. P., BOYTSEKHOVSKIY, V. A.,
SHKLYAYEV, V. Ye.

"Process of Production of Long-Axis Forgings by Extension in the Superplastic State"

Kuznechno-Shtampovoye Proizvodstvo, No 1, Jan 73, pp 7-10.

Abstract: A process of monaxial form change in the state of superplasticity, the relationship between initial and final dimensions of the piece, kinematic plans of experimental installations and the dependence between the primary parameters of the process in the initial and stable stages are studied. The conditions of development of the state of superplasticity are also studied. Examples of products produced by this method are presented and the advantages and disadvantages are noted.

USSR

UDC 621.7.011

OKHRIMENKO, Ya. M., SMIRNOV, O. M., SURMACH, L. V., KUCHINOV, M. M.

"Superplasticity of VTZ-1 Titanium Alloy"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Svedeniy, Tsvetnaya Metallurgiya, No 4, 1972, pp 133-136.

Abstract: The optimal temperature and rate conditions for deformation of VTZ-1 alloy to the state of superplasticity are established: temperature interval 800-950°, rate interval 10^{-3} - 10^{-4} sec $^{-1}$; it is shown that the single-phase β area should not be entered during heating. Under these temperature and rate conditions, clear signs of the state of superplasticity were produced in VTZ-1 alloy, i.e., exceptionally high values of relative elongation ($\delta = 950\%$) in combination with low deformation resistance ($\sigma = 0.4-4$ kg/mm 2) and a coefficient rating sensitivity of deformation resistance to deformation rate $m > 0.4$. These data indicate good prospects for the use of the effect of superplasticity in the pressure working of metals.

1/1

- 49 -

USSR

UDC: 621.777.01

OKHRIMENKO, YA. M., BEREZHNOY, V. L., SECHEREA, V. N. and SHARIKOV, G. S.

"A New Process of Rapid Extrusion of Low-Plasticity Alloys"

Moscow, Kuznechno-shtampovoye proizvodstvo, No 1, Jan 72, pp 6-9

Abstract: Detailed is a new process of high-speed forming of semifinished products, shapes, and pipes without lubricants using the principle of deformation friction between the container and the metal, with the friction oriented in the direction of the outflow of the extrudable metal. The study was conducted on cast AV, V96Ts, AMg6, AD31, D16, A00, LS59-1 and granulated 01435, S97 alloys under both laboratory and plant conditions. Analysis of the process indicates its potentialities in metalworking. The use of high-speed extrusion (as an alternative to direct extrusion) to produce rods from D16 alloy under semicontinuous conditions without lubricants increases the labor productivity 2.5 times as a result of the higher rate of outflow and yield of extrudable product as well as the elimination of some of intermediate operations specified in the current technology for separating the discard. The test results of high-speed extrusion under production conditions support the expediency of its further development and promotion for

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USSR

OKHRIMENKO, YA. M., et al, Kuznechno-shtampovoye proizvodstvo, No 1,
Jan 72, pp 6-9

the fabrication of semifinished products, shapes, and pipes primarily from
low-plasticity and hard-to-form alloys. (3 illustrations, 1 table,
6 bibliographic references).

2/2

- 11 -

USSR

UDC 539.4.015/019

OKHRIMENKO, Ya. M., and TYURIN, V. A., Moscow

"Surface of the Plastic Properties of a Metal"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 112-116

Abstract: An investigation was made of the plastic properties of a forged shaft 430 mm in diameter and 6000 mm long made from a 10.6-ton 38KhNVA steel ingot. A description is given of the forging process on a 3500-ton press. A disk 220 mm thick was cut from the shaft for the purpose of mechanical tests, from which 16 test samples oriented along 13 different directions were cut in the annular zone of the disk at a certain distance from the center. After two different heat treatments all samples were subjected to tensile strength tests. The results are presented in the form of "hodographs" of the lateral contraction. The graphic method of analysis which was developed makes it possible to interpret the test results by surfaces of plastic properties, such as index of lateral contraction and absolute anisotropy. The effect of repeated hardening with low temperature annealing, resulting in increased plastic properties, is noted. The minimum value of lateral contraction was observed with the sample oriented radially (15%), while the maximum value corresponded to a longitudinal orientation (39.6%). The absolute anisotropy is manifested more in sections of plastic property surfaces with γ parameters constant (0.30, 60°).

1/1

USSR

UDC 669.74':621.73.011

LIVSHITS, B. G., OKHRIMENKO, Ya. M., TYURIN, V. A., and MILYAYEV, I. M.,
Moscow Institute of Steel and Alloys

"Deformation Characteristics of Low-Plasticity Manganese-Aluminum Alloys"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya,
No 11, 1970, pp 126-129

Abstract: An experimental investigation was made of the temperature dependence of the plasticity of Mn-Al alloys (71% Mn; 29% Al) in dynamic and quasi-static compression, in the interval of 20-1100°C, and of the effect of the structural condition on strain hardening in the cyclic loading process. Experimental data are discussed by reference to diagrams showing the deformation stress during static upsetting at various temperatures and in relation to the compression degree in highly coercive and monotonic cyclic loading conditions. A sharp increase of plasticity was found in a low rate deformation at 550-850°C, which in this interval combines with phase transformations. An abnormal increase of the elastic modulus, the proportional limit, and the maximum compression stress takes place in a repeated loading after unloading the specimens in a highly coercive condition.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANALYSIS OF THE ACTIVE EXTRUSION OF LEAD BY VISUAL AND UPPER
ESTIMATE METHODS -U-
AUTHOR-(02)-OKHRIMENKO, YA.M., BEREZHNOY, V.L.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METALLY, FEB. 1970,(2), 55-59
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL EXTRUSION, LEAD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0193 STEP NO--UR/0136/70/000/002/0055/0059
CIRC ACCESSION NO--AP0123962

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123962

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXISTING METHODS OF STUDYING THE EXTRUSION OF PB AND SIMILAR METALS ARE SUMMARIZED AND DISCUSSED, AND THE MERITS OF COMBINING THE TECHNIQUE OF VISUAL ANALYSIS (STUDIES OF DEFORMATION USING INSCRIBED GRIDS ON THE BILLET SURFACE) WITH AN ANALYTICAL ESTIMATE OF THE UPPER LIMIT OF THE SPECIFIC PRESSURE ARE CONSIDERED. THE COMBINATION OF THESE TWO APPROACHES IS EXTREMELY PROMISING FOR THE STUDY OF ALL PROCESSES CONNECTED WITH METAL EXTRUSION.

UNCLASSIFIED

USSR

UDC 669-412.141.241.2:658.562

KOLOSOV, M. I., STROGANOV, A. I., SMIRNOV, YU. D., and OKHIMOVICH, B. P.
 "Killed Steel Ingot Quality"

Moscow, Kachestvo slitka spokoynoy stali (cf. English above), Metallurgiya, 1973, 408 pp (from Kachestvo slitka spokoynoy stali, Metallurgiya, 1973, pp 2-5)

Translation of Annotation: This book is devoted to the description of the process of crystallization of a killed steel ingot. A study is made simultaneously of the processes occurring on solidifying of the ingot: the behavior of the gases and nonmetallic inclusions, the admixture distribution, convective flows, and so on.

A great deal of attention in the book is given to the investigation of various macro and microdefects of the steel ingot and in the majority of cases practical recommendations are made with respect to elimination of them.

The book is intended for engineering and technical workers of the metallurgical plants, the planning and design and scientific research institutions and training institutions, and it can be useful for students specializing in steel metallurgy.

There are 89 illustrations, 60 tables and a 551-entry bibliography.

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KOLOSOF, M. I., et al., Kachestvo slitka spokojnov stali, Metallurgiya, 1973,
408 pp

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5/5

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USSR

UDC 612.62

TARAKHOVS'KIY, M. L., SAMBROSKA, E. P., MEDVEDEV, B. M., ZADOROZHNA, T. D.,
OKHRONCHUK, B. V., and LIKHTENSHTEYN, Ye. M., Experimental Department, Kiev
Institute of Pediatrics, Obstetrics and Gynecology, and Physiology Laboratory,
All Union Institute of Hygiene and Toxicology of Pesticides and
Plastics

"The Effect of Permanent and Alternating Magnetic Fields on Some Physiological
Functions and Metabolic Processes in White Rats"

Kiev, Fiziologicheskii Zhurnal, No 4, 1971, pp 452-459

Abstract: Exposure of rats for one month to permanent and alternating
magnetic fields (130 to 140 cersteds) significantly altered ovarian function,
blood proteins, hemoglobin, erythrocytes, and hematocrit index. Morphological
changes in the ovaries, liver, and adrenal glands were more pronounced after the
action of the alternating magnetic field. Other quantitative and qualitative changes
suggest that the mechanism of action of the two types of magnetic fields differs.

1/1

- 24 -

1/2 018
TITLE--OPTIMUM REGIME FOR ELECTRODIAMOND GRINDING MAGNETICALLY HARD ALLOYS
-U-
AUTHOR--OKHTEN, V.D.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 25-26
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HARD ALLOY, BIBLIOGRAPHY, DIAMOND TOOLING TECHNOLOGY, METAL
GRINDING, MAGNETIC ALLOY, ELECTROEROSION MACHINING
CENTRL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1304
CIRC ACCESSION NO--AP0123263
STEP NO--UR/0121/70/000/P03/0025/0026
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123263

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE IS AN INVESTIGATION OF THE PRINCIPLES FOR DETERMINING THE OPTIMUM CONDITIONS OF ELECTRODIAMOND GRINDING MAGNETICALLY HARD ALLOYS. CORRESPONDING EMPIRICAL FORMULAS ARE GIVEN. THE FEASIBILITY OF MACHINING WITH A MAXIMUM TRANSVERSE FEED AND CUTTING DEPTH AT RELATIVELY SMALL LONGITUDINAL FEEDS IS ESTABLISHED.

UNCLASSIFIED

USSR

UDC: 621.391.27:621.376.32

OKHTYARKIN, Ye. G. and LOGINOV, V. V.

"Analyzing the Threshold Characteristics of Synchronous Phase Demodulators"

Moscow, Elektrosvyaz', No. 12, 1970, pp 8-11

Abstract: The synchronous phase demodulator is defined as the phase AFC system used as a frequency demodulator in artificial satellite and tropospheric communication lines, and to improve the noise immunity of the receiving equipment in the Soviet "Orbita" television system. This article is evidently the continuation of an earlier one (Devele, Porogovyy kriteriy dlya sinkhronnoy demodulatsii, TIIR -- Threshold Criterion for Synchronous Demodulation/expansion of TIIR unknown/ -- 1963, No. 2) which determined the threshold characteristics of the synchronous phase demodulator and found the threshold signal-to-noise threshold ratio for the optimal transfer function and second order systems. By using the results of this and other earlier papers, the authors of the present article determine the moment at which the threshold sets in.

1/2

USSR

OKHTYARKIN, Ye. G. and LOGINOV, V. V., Elektrosvyaz', No 12, 1970, pp 8-11

The threshold characteristics of the SPD with and without a proportionally integrating filter are compared, and it is shown that use of the filter substantially improves the gain in a shift of the threshold for high modulation indices.

2/2

- 16 -

OKH TYARKIN, Ye. G.

electronics

JPRS 55281

28 February 1972

SO: JPRS 55281
28 FEB 72

UDC 621.391.27:621.376.32

ANALYSIS OF THRESHOLD CHARACTERISTICS OF THE
SYNCHRONOUS-PHASE DEMODULATOR

[Article by Ye. G. Okhtvarkin and V. V. Loginov; Moscow,
Elektrosvyaz, Russian, 1970, No 12, pp 8-11]

Introduction

On satellite and tropospheric lines of communication, the system of phase automatic frequency control (PAFC) is applied in the capacity of frequency demodulator. Such a demodulator (we shall call it synchronous-phase demodulator--SPD) is used to improve noise elimination at the receiving end of the "Orbita" national television system.

Threshold characteristics of the SPD is a basic indicator at the comparison of demodulators, which, to a considerable degree, determine the qualitative characteristics of the receiver. In the first work [2] devoted to the determination of the threshold properties of the SPD, the threshold rate signal/noise for the optimal transfer function and for the system of the second order was found on the basis of the criterion for the minimum dispersion of phase error. However, without sufficient justification the moment when the phase error exceeds 1 radian is accepted as the threshold point. The results in [2] differ substantially from the results of experimental verification [3]. Making use of the results in [2] and of the known statistical characteristics of the system obtained on the basis of nonlinear analysis [4, 5], we shall determine the moment of approach of the threshold.

Threshold Characteristics of Demodulators

The basic idea [1] consists of making use of the jumps of phase by 2π of the resultant vector of signal and

[1 - USSR - F]

- 1 -

USSR

UDC 669.71:620.178.3

OK'KIN, B. I., BARTEN'EVA, G. F., and SAVOST'YANOVA, T. G.

"Investigation of the Durability of Aluminum Alloys"

Moscow, Zavodskaya Laboratoriya, No 5, 1972, pp 591-593

Abstract: Consideration is given to a procedure for testing the durability of flat specimens during the action of cyclical temperature stresses, and experimental data are presented on the durability of alloy AK4-IT specimens under the action of cyclical temperature and mechanical stresses with a supplementary static load. 4 figures. 1 table. 2 references in the form of foot notes.

1/1

Food Technology

USSR

UDC 613.27:629.78.048

VEBER, M. I. and OKLADNIKOV, M. N., Institute of Physics im. L.V. Kirenskiy, Siberian Department of the Academy of Sciences USSR, Krasnoyarsk

"Mineral Content of the Diet of Biological Life Support System Testers"

Moscow, Voprosy Pitaniya, No 2, 1973, pp 24-26

Abstracts: Three human subjects subsisted for 30 days on one of two diets in a hermetically sealed chamber to ensure strict control of the amount of minerals consumed with food. One diet consisted wholly of lyophilized foods of various kinds. In the other, the vegetables were gradually replaced by vegetables grown in a phytotron (greenhouse) forming part of a closed life support system. The amount of phosphorus, magnesium, sulfur, potassium, sodium, and calcium was found to be largely the same in both diets, which met the recommended physiological standards.

1/1

OKLADNIKOV, Yu. N.

SPAS 55687
121 Apr 1972

UDC 613.693-07:616-056.3-02:582.264.45-057

INVESTIGATIONS OF THE ALLEGENIC PROPERTIES OF CHLORELLA

(Article by Yu. N. Okladnikov and L. S. Lyubetskaya; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 1, pp 23-28, 1972, submitted for publication 28 December 1970)

Abstract: This paper presents the results of a study of the immunobiological status of man long sustained by a bioregenerative life support system. It is not impossible that under the conditions of a direct gas exchange between algal and bacterial biocenosis and man allergization and autoallergic processes may develop and specific and non-specific resistivity of the human body may change. During the prolonged experiment it was shown that the functioning of the hypothysis-adrenal cortex system was accelerated and the level of humoral factors responsible for specific and nonspecific immunity was increased. The test subject exhibited no C-protein or autoantibodies to vital organs and tissues. Special tests conducted for determining sensitization gave evidence of human tolerance to Chlorella and its gaseous metabolites when in contact via direct gas exchange and regenerated water. These data give support to the idea advanced earlier that man and Chlorella, that is, two basic components of the life support system, are biologically compatible. In other words, they may coexist in a closed biological life support system.

In the presence of gas exchange between a culture of algae and man in a pressurized cabin special environmental conditions are created which are characterized by an increased content of carbon dioxide and other gaseous metabolites of man and the culture of algae, the presence of singular associations of microorganisms, etc. (L. V. Kirenskiy, et al.).

This study was undertaken for the purpose of investigating the immunological reactivity of man long confined to a biological life support system. The unusual nature of the studied problem is that immunological body reactivity is examined in the presence of a close contact and interaction between man

1/2 030 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--A KARYOLOGIC STUDY AT THE LATE STAGES OF AN ACUTE RADIATION DISEASE
-U-
AUTHOR--OKLADNIKOVA, N.D.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA; 6: NO. 2, 152-60(FEB 1970).
DATE PUBLISHED----FEB70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIATION SICKNESS, GAMMA IRRADIATION, NEUTRON IRRADIATION,
CHROMOSOME, LYMPHOCYTE, BONE MARROW, CELL CULTURE, RADIATION GENETIC
BIOLOGIC EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/E09 STEP NO--UR/0473/70/006/002/0152/0160
CIRC ACCESSION NO--AP0140419

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CYTOGENETIC STUDY WAS MADE ON FOUR PATIENTS WHO HAD SUFFERED RADIATION DAMAGE FROM 7 TO 10 YR AGO AS A RESULT OF THE WHOLE BODY GAMMA AND NEUTRON IRRADIATION. THE TOTAL DOSE WAS 270 TO 980 "BARS". THE STRUCTURAL ABNORMALITIES OF CHROMOSOMES WERE OBSERVED IN THE LYMPHOCYTES FROM THE PERIPHERAL BLOOD, THE FREQUENCY OF CHROMOSOMAL ABERRATIONS BEING 0.01 TO 0.06 PER CELL. ALSO THE TENDENCY TO POLYPLOIDY WAS FOUND AS WELL AS THE INCREASED NUMBERS OF CELLS WITH ENDOREDUPLICATED CHROMOSOMES AND THE DECREASED ASSOCIATION OF SATELLITE CHROMOSOMES. THERE WAS NO DEFINITE CORRELATION OF ABERRATION FREQUENCY WITH THE TOTAL DOSE. THE COMBINED STUDY OF BONE MARROW CELLS AND CULTURES OF THE PERIPHERAL BLOOD DID NOT REVEAL ANY CHROMOSOMAL ABERRATIONS IN THE BONE MARROW. FACILITY INST. OF BIOPHYSICS, MOSCOW.

UNCLASSIFIED

USSR

UDC 576.312.36

OKLADNIKOVA, N. D., Institute of Biophysics, Ministry of Health USSR

"Results of Clinical and Cytogenetic Studies on Individuals After Recovery From Acute Radiation Sickness"

Moscow, Genetika, No 2, 1970, pp 152-160

Abstract: Karyologic investigation of peripheral blood leukocytes and bone marrow cells of four people, 27 to 41 years of age, was conducted 8-10 years after exposure to whole-body gamma and neutron irradiation (270 to 980 RBE) subjects had suffered from acute radiation sickness of varying severity. Examination of lymphocyte cultures revealed a variety of chromosome aberrations, a tendency toward polyploidy, an increase in the number of cells with endoreduplication of the chromosomes, and decreased association of satellite chromosomes. However, no structural changes were detected in the bone marrow cells. Although the number of chromosome aberrations increased with the size of the irradiation dose, no direct dose dependence was observed. No correlation between the cytogenetic disruptions and clinical symptoms was observed.

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AP9052913

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 113-115

M. F. Shostakovsky,
Yu. G. Krvajev, A. V. Rjepka, Z. A. Okladnikova

THE PREPARATION
OF POLYDIMETHYLVINYLETHINYLCHEMOMETHANE
AND ITS CONVERSIONS

Polydimethylvinylethynylchloromethane has been obtained and aminated.

1949 1612

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POLYMERIZATION OF VINYLIDENE CHLORIDE BY A CATIONIC MECHANISM -U-

AUTHOR--(04)-KULIKOVA, A.YE., ZILBERMAN, YE.N., PINCHUK, N.M., OKLADNOV,

N.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 298-301

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, VINYLIDENE RESIN, CHLORIDE, CHEMICAL REACTION
MECHANISM, CATALYST, ZINC CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3006/1248

STEP NO--UR/0460/70/012/004/0298/0301

CIRC ACCESSION NO--AP0134922

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134922

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATIONIC POLYMN. OF CH
SUB2:CCL SUB2 WAS STUDIED IN THE PRESENCE OF ZNCL SUB2. UNLIKE THE
POLYMN. IN THE PRESENCE OF ALCL SUB3, ZNCL SUB2 INITIATED POLYMN. GAVE
MECCL SUB2 CH:CCL SUB2 AND POLY(VINYLDENE CHLORIDE). A REACTION
MECHANISM WAS PROPOSED.

UNCLASSIFIED

USSR

UDC: 621.397.61

ZIMNEV, M. M., NEMANOV, V. S., OKMAN, A. A.

"Audio Equipment at the Soviet-Wide Television Center"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz", 1971, pp 164-181 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G173)

Translation: The authors discuss the principal elements of the audio channel -- amplifiers, electroacoustic equipment, etc. A description is given of the main equipment in the sound studio module and the equipment of the central services -- programming unit, translating unit, video recording unit, etc. The technical characteristics of the main audio channels of the telecenter are given. Six illustrations. N. S.

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USSR

UDC 621.315:621.59

ASTAKHOV, YU. N., Candidate of Technical Sciences, VENIKOV, V. A., Doctor of Technical Sciences, ZUYEV, E. N., OKOLOVIN, V. S., Candidates of Technical Sciences, Moscow

"Unconventional Methods of Power Transmission Using Deep Cooling"

Moscow, Elektrichestvo, No 5, May 1971, pp 1-9

Abstract: Possible areas of research in the field of unconventional methods of electric power transmission which can be connected in one way or another with the use of deep cooling are discussed. An effort is made to demonstrate that deep cooling must be considered the only real possibility for radical improvement of the carrying capacity of a transmission unit to such values as 30-50 gigawatts per circuit available today. The general characteristics of deep-cooled line transmission and microwave transmission are discussed. The state of the art of cryogenic electric power transmission lines is presented from both Soviet and foreign data. The initial characteristics and choice of parameters of superconducting AC lines with coaxial conducting elements, the application of superconducting storage elements and cryogenic cable research are discussed.

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USSR

ASTAKHOV, YU. N., et al., Elektrichestvo, No 5, May 1971, pp 1-9

Cryogenic cables for various purposes can in the next 10-20 years solve the problem of transporting large amounts of power. Accordingly, scientific research in this field must be pushed. Superconducting AC lines must be compared with DC lines using type II superconductors. When designing superconducting AC lines for long distances, schemes insuring an increase in carrying capacity with respect to stability conditions and the best use of the conducting properties of the material must be considered. The application of superconducting magnetic systems can lead to the creation of effective electric power storage elements for regulating the operating conditions of the system in the presence of low variations.

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USSR

UDC 669.7/.8.008

ASTAKHOV, YU. N., and OKOLOVIN, V. S.

"Principles of Designing Cryogenic Circuits of Electric Power Supply for Electrolytic Enterprises"

Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii (All-Union Seminar of Electrical Engineers of the Enterprises of Non-ferrous Metallurgy on the Question of Economizing on Electrical Power - collection of Transactions), Moscow, 1970, pp 120-138 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G119)

Translation: The feasibility of applying cryogenic apparatus in the circuit of the electrical power supply for electrolytic shops for smelting Al, Mg, Ti, and other nonferrous metals is demonstrated. However, the following engineering problems must first be resolved: creating efficient tube reduction valves for helium and nitrogen temperatures; improving the design and reducing the cost of low-temperature insulation; developing techniques for the mass production of super-conducting coatings on different bases;
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USSR

ASTAKHOV, YU. N., and OKOLOVIN, V. S., Sb. materialov Vses. seminarov energetikov predpriyatiy tsvetn. metallurgii po ekon. elektroenergii, Moscow, 1970, pp 120-138 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G119)

and developing satisfactory designs of vacuum couplings and current bridges between zones of different temperatures. Further analysis and experimental verification of the theoretical conclusions are necessary.

2/2

USSR

UDC 621.039.50

TAKIBAYEV, ZH. S. and IFRAGIMOV, SH. SH., Members of the Academy of Sciences
Kazakh SSR, BATYRBEKOV, G. A. and OKOLOVICH, V. N., Candidates of Physico-
Mathematical Sciences

"The Modernized VVR-K Reactor and Its Contribution to the National Economy
of Kazakhstan"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

Abstract: The VVR-K nuclear research reactor was put in operation in 1967.
The modernization of the reactor core, control system, and safety devices
resulted in:

1. Creation of 140-mm-diameter channel in the center of the core with a
neutron flux of 3×10^{14} neutron/cm² x sec.
2. Increase of reactivity reserve which allows tests to continue for
1.5-2 months without shutdown.

The following research work has been conducted:

1. Determination of neutron-physics characteristics.
2. Research on radiation physics and chemistry. The effect of nuclear
radiation on properties of absorbents and catalysts was investigated.

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USSR

TAKIBAYEV, ZH. S., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

3. Nuclear physics research. Nuclear and gamma-resonant scattering with short-life isotopes was investigated.

4. Activation analysis and production of isotopes.

The following research work is proposed for the future:

1. Effect of radiation on materials and processes. Radiation causes an increase of strength of many metals. Examples are given.

2. Use of radiation and radioactive isotopes in the national economy of Kazakhstan. About 90 isotopes used in USSR are obtained by radiation in the reactors. Radioactive method is the most sensitive for detecting impurities in materials.

3. Nuclear physics.

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANGULAR ANISOTROPY OF THE FISSION OF PB PRIME204 AND PB PRIME208 BY
ALPHA PARTICLES NEAR THE THRESHOLD -U-
AUTHOR--(03)-KUVATOV, K.G., OKOLOVICH, V.N., SMIRENKIN, G.N.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 42-5 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, ALPHA PARTICLE, SPECTRUM, EXCITED
NUCLEUS, DEFORMED NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1749

STEP NO--US/0000/70/011/001/0042/0046

CIRC ACCESSION NO--AP0133654

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE ANGULAR ANISOTROPY MEASUREMENTS IT WAS ESTABLISHED THAT THE ENERGY GAP IN THE SPECTRUM OF THE INTERNAL EXCITATIONS OF THE NUCLEUS IN ITS TRANSITION STATE, ΔF , HAS A WEAK DEPENDENCE ON THE DEFORMATION OF THE NUCLEUS IN THE FISSION PROCESS. (10 REFS.). FACILITY: KAZAKH ACAD. SCIS. USSR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANGULAR ANISOTROPY OF LEAD 204 AND LEAD 208 FISSION BY ALPHA
PARTICLES NEAR THRESHOLD -U-
AUTHOR-(03)-KUVATOV, K.G., OKOLOVICH, V.N., SMIRENKIN, G.N.
COUNTRY OF INFO--USSR
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 42-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, NUCLEAR FISSION, ALPHA BOMBARDMENT,
FISSION CROSS SECTION, EXCITATION ENERGY, EXCITED NUCLEUS, ANGULAR
DISTRIBUTION, POLONIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0679 STEP NO--UR/0386/70/011/001/0042/0046
CIRC ACCESSION NO--AP0105655
UNCLASSIFIED